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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/780,239	02/16/2004	Loyal M. Johnson JR.	Phelps US-43	9667
27104	7590	05/17/2007		
FENNEMORE CRAIG, P.C. 1700 Lincoln Street SUITE 2625 DENVER, CO 80203			EXAMINER KASTLER, SCOTT R	
			ART UNIT 1742	PAPER NUMBER
			MAIL DATE 05/17/2007	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/780,239	<b>Applicant(s)</b> JOHNSON, LOYAL M.	
	<b>Examiner</b> Scott Kastler	<b>Art Unit</b> 1742	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 04 April 2007.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 18-27 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 23 is/are allowed.
- 6) ☒ Claim(s) 18-22 and 24-27 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 18, 19, 21 and 24-27 are rejected under 35 U.S.C. 102(b) as being anticipated by Fuchita'324. Fuchita'324 teaches a method of forming ultra fine particles (which are below 1 micron in diameter, see col. 6 line 61 for example, and therefore meet the instant definition of a nano-particle, which is defined by the instant specification at page 1 as particles below 1 micron in diameter) which may be silver (see col. 8, lines 32-33), by vaporizing, or evaporating a precursor silver material in a crucible (22) inductively (through the use of inductive heater 24), and then mixing the vaporized precursor material with an inert process gas in a mixing region (21), drawing the mixture into an inlet end of a conduit (31) where the process gas cools the precursor and precipitates a silver nano-particle material, which is then separated and collected on substrate (42), where the process is conducted at a pressure between 0.1 and 6 torr (see col. 6, lines 5-10 for example, where the process is conducted at 0.3 torr), thereby showing all aspects of the above claims.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

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having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 20 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fuchita'324. As applied to claim 18 thatr above, Fuchita'324 shows all aspects of the above claims except the use of a heating temperature of between 1600 and 2000 °C or the use of nitrogen as the process gas, although Fuchita'324 allows for the use of any heating temperature sufficient to evaporate or vaporize the precursor material and specifically allows for any desired type of inert process gas (see col. 8 lines 35-37 for example). It has been well settled that where no new or unexpected result is shown to arise from the use of a specific composition or range within a broader range disclosed by the applied prior art as equally useful, motivation to select any value or composition within the disclosed prior art range would have been a modification prima facie obvious to one of ordinary skill in the art at the time the invention was made. See MPEP 2144.05. In the instant case, absent any demonstrated new or unexpected result arising therefrom, motivation to employ any heating range allowing for evaporation of the precursor material, as required by Fuchita'324, including temperatures between 1600 and 2000 °C, and the use of any inert gas, including nitrogen for the inert process gas of Fuchita'324, would have been modifications obvious to one of ordinary skill in the art at the time the invention was made.

***Allowable Subject Matter***

Claim 23 is allowed.

***Response to Arguments***

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Applicant's arguments filed on 4/4/2007 have been fully considered but they are not persuasive. Applicant's argument that Fuchita does not disclose drawing vaporized material into an inlet, but rather sucking ultrafine particles into the inlet is not persuasive because as stated in the above rejection Fuchita clearly states that evaporated material is drawn into the inlet (see col. 1 line 45 and col. 2 line 11 for example, as well as claim 1) . Applicant's further argument that Fuchita does not disclose the manufacture of silver nano particles is not persuasive because again as stated in the above rejections, Fuchita specifically recites that silver particles may be produced (col. 8 lines 35-38 for example) and that the particles not the grain size is in the nano particle range (see col. 1 lines 5-15 for example where it is stated that ultra fine particles below 1 micron in diameter are produced). Applicant's further argument that Fuchita constitutes non-analogous art is not persuasive because as stated above Fuchita produces the same material in the same way as instantly claimed. Finally, Applicant's argument that the instantly claimed temperatures and gases, although within that which is broadly disclosed as useable by Fuchita is not obvious is not persuasive because as stated above, it has been well settled that where no new or unexpected result is shown to arise from the use of a specific composition or range within a broader range disclosed by the applied prior art as equally useful, motivation to select any value or composition within the disclosed prior art range would have been a modification prima facie obvious to one of ordinary skill in the art at the time the invention was made. See MPEP 2144.05. In the instant case, absent any demonstrated new or unexpected result arising therefrom, motivation to employ any heating range allowing for evaporation of the precursor material, as required by Fuchita'324, including temperatures between 1600 and 2000 °C, and the use of any inert gas, including

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nitrogen for the inert process gas of Fuchita'324, would have been modifications obvious to one of ordinary skill in the art at the time the invention was made.

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

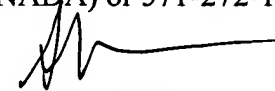
A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Scott Kastler whose telephone number is (571) 272-1243. The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on (571) 272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Scott Kastler  
Primary Examiner  
Art Unit 1742

sk